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As expected, students involved in a study of college impact did, in fact, become more "liberal" politically and less "traditional" in their religious views between their entry into college and the beginning of their sophomore year. Data collected to test a model of student attitude change indicated that the internal consistency of variable sets included in a system of college impact did differ in predicted directions. Further, the psychological and social factors that characterize the impact system show smaller interrelationships for students who change their political attitudes than for those whose attitudes remain stable. The social factor is the stronger set of predictor variables. The present data point out, however, the futility of generalizing across college systems as if they were identical regarding either the students they attract or the processes of influence they exert on those students once they are matriculated. (Author/TS)

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PROGRESS REPORT ON "COLLEGE AS A COMMUNICATION SYSTEM"

Presented to
Information Systems Division
International Communication Association
April, 1976 Portland, Oregon

by

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CS 501 345

ABSTRACT

PROGRESS REPORT ON "COLLEGE AS A COMMUNICATION SYSTEM"

As expected, students involved in a study of college impact did, in fact, become more "liberal" politically and less "traditional" in their religious views between their entry into college and the beginning of their sophomore year. Data collected to test a model of student attitude change indicated that the internal consistency of variable sets included in a system of college impact did differ in predicted directions. Further, the psychological and social factors that characterize the impact system show smaller interrelationships for students who change their political attitudes than for those whose attitudes remain stable. The social factor is the stronger set of predictor variables, as predicted.

The present data point out, however, the futility of generalizing across college systems as if they were identical regarding either the students they attract or the processes of influence they exert on those students once they are matriculated. While the general propositions of the college impact model receive support in the heterogeneous environment of San Jose State University they do not receive complete support in the more cohesive environment at the University of Santa Clara. Social and psychological factors designed to predict attitudes operate differently if attitude change is conservative or liberal, and that operation is not consistent across college campuses. Whether that difference in operation is an artifact of the data produced by the two universities in the sample or a true difference in system impact remains to be seen when the last survey wave is complete and when the study sample has, at last, stabilized.

PROGRESS REPORT ON "COLLEGE AS A COMMUNICATION SYSTEM"

In April, 1974, I presented a paper entitled "College as a Communication System" to the Systems Division of ICA at the New Orleans convention. In that paper I outlined a review of the pertinent literature, a model of the student attitude change process, some pilot test data that demonstrated increasing efficiency of attitude prediction using variables ultimately included in the model, and an approach to a longitudinal study with four survey waves. The second survey wave of that longitudinal study has now been completed. This presentation is a progress report on the adequacy of the model with first-approximation data and on the conceptualizations of communication-on-the-campus that have entered the model as predictors of student attitude change over time.

THE MODEL

The model to be tested had its theoretical base in balance concepts. It was intended to specify the process of reconciliation between the student's self-image response with the social and institutional emphases of his reference groups within the communication system. Two different sets of variables were presented as those having potential impact on the attitude change process. The variable sets in the model attempt to account for a wide array of communication components at both the psychological (P) and social (S) levels.

NOTE: No bibliography is included here since this is strictly an empirical report. Appendices indicating index construction are attached..

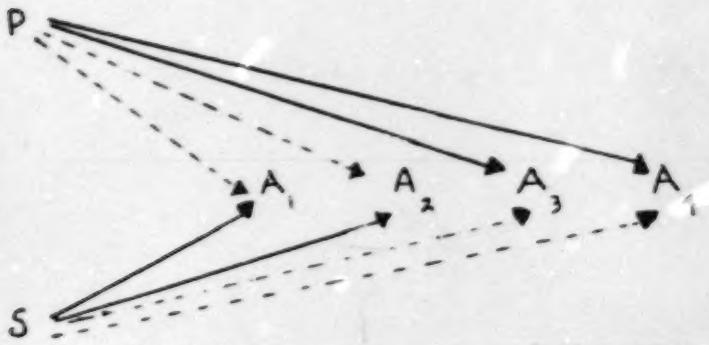
Relationships within and between the sets are the major factors in the attitude change process. Relations within the respective psychological (P) and social (S) variable sets should be consistent before one set can have any major effect on the other; inconsistencies within the sets reduce the magnitude of that set's influence. The conceptualization of relations between the sets emphasizes the interaction between psychological (P) and social (S) factors in the determination of values supposedly attributable to a college education.

The major propositions put forth in the development of the model are these:* (1) the greater the consistency of either P or S factors, the greater the impact of that factor on the student's value system; (2) the greater the correspondence between P and S factors, the lesser the change in student value systems; (3) as the student matures, the greater the consistency in P factor.

The contributions to student values of S and P are complementary and will change over time in a direction that predicts the increasing contribution of P as the student matures. Put more simply in diagram form, the path of college impact will change, following the solid and broken lines of greater and lesser influence, respectively, in the figure below.

*Consistency = inter-item correlation and correspondence = canonical correlation between factors.

COLLEGE IMPACT PATH



where subscripts 1-4 refer to freshman through senior years

The second proposition is the key to movement within the college system. Assuming initial social communication selections are made to maintain psychological stability, a poor reconciliation between S and P factors should carry drive value, motivating changes in social communication until consistency is restored. Yet the general consistency form of proposition 1 requires some specification of the mechanisms by which attitude change takes place over the matriculation period. The relationship of consistency and correspondence to the amount of attitude change stipulates the result of two sets of relationships, intra-factor and inter-factor. Working back from the amount of change as the classifying variable, comparisons of inter-item correlations (consistency) and size of canonical correlation coefficients (correspondence) may be calculated. Such a comparative analysis would take this general form:

$$\frac{C_{yes}}{r_s r_p} < \frac{C_{no}}{r_s r_p}$$

$$R_{sp} < R_{sp}$$

where C = change in attitude scale score
r_p = consistency within the P factor
r_s = consistency within the S factor
R_{sp} = correspondence between the P and S factors

These comparisons can be made to indicate the strength or weakness of the model as a representation of the attitude change process over the four-year matriculation period.

Those who have shown the greatest attitude change should show the least consistency within either factor and the least correspondence between the factors. After the first year at college, the S factor should have greater consistency than the P factor and, therefore, should predict more of the variance in student attitudes.

RESULTS

The sample. The plague that visits longitudinal studies is attrition. From the start of the study, with 1500 and nearly 500 students at two northern California universities, the number of participants dropped to 374 at San Jose State University and 202 at Santa Clara University. Many factors enter into this attrition, not the least of which is the absence of staff and funds with which to persuade the students to fill out yet another questionnaire of considerable length. The task confronting the researcher, in the face of this significantly reduced sample, is to demonstrate the comparability of the original and the remainder. Fortunately, the sub-sample remaining after the second wave is nearly identical in demography to the larger group from which the students have selected themselves.

When the criteria of sex, age, and cumulative college GPA were used to compare original and remaining sample groups, fewer than two percentage points separated the groups on any of these descriptive variables across samples. Distributions by choice of major did change, but those changes were minor and could be explained better by job opportunity trends than by intrinsic characteristics of the students who chose to cooperate in the second wave compared to those who found it convenient to be "absent" from the data collection effort. Consequently, the data seem to support the assertion that the sub-sample at each of the study schools is a microcosm of the original and that results based on the responses from the second wave may be generalized to the population from which the sample

had originally been drawn. Data collection has been completed but not analyzed from the third wave, and there is more attrition; future progress reports will await the completion of the fourth survey wave in order to stabilize the sample completely.

Changes in perspective. At the second wave of this survey, students had become more liberal in their self-identified political stand, considered the society in general to be in worse shape than they had the year before, and more often proclaimed membership in the Democratic party than sustain their political independence with political party "leanings." Job goals remained about the same, although above-average income increased in importance.

TABLE 1

CHANGE IN DISTRIBUTION OF POLITICAL SELF-IDENTIFICATION AND VIEW OF SOCIETY FOR SECOND WAVE STUDENTS

POLITICAL SELF-DESCRIPTION:	Radical	Moderate	Conservative	N
SJSU 1974	.28	.64	.05	
1975	.33	.60	.07	374
SCU 1974	.27	.61	.10	
1975	.32	.59	.09	202
VIEW OF SOCIETY:	Sick	Average	Healthy	
SJSU 1974	.47	.27	.25	
1975	.59	.22	.19	374
SCU 1974	.39	.28	.33	
1975	.53	.24	.23	202

When placement on the index of self-image in 1974 was compared to self-image in 1975, movement seemed to be maximum where the

original identification was tentative. The majority of those unsure students identified with the values describing a PRAGMATIST view in 1975. That is, a larger proportion of students valued practical accomplishments, logical ideas , and systematic planning in the second wave than had supported those values in the original analysis. There was also some identifiable change in self-image by students whose original self-description was PRAGMATIST or HUMANIST to the opposite group. Overall, however, most of the movement was clearly into the PRAGMATIST classification. Students at Santa Clara showed less change in self-image over the first college year than those at San Jose State.

TABLE 2

CHANGES IN SELF-IMAGE FOR SJSU SECOND WAVE STUDENTS

	1975 PRAGMATIST	MIXED	HUMANIST	REBEL	N
1974 PRAGMATIST	.66	.08	.23	.02	167
MIXED	.45	.20	.27	.08	51
HUMANIST	.32	.16	.51	.01	146
REBEL	.30	.20	.20	.30	10

By the start of the sophomore year, students became more assertive regarding their rights. Few changes occurred in proportion of agreement with attitude items concerning students' say in faculty tenure, censorship of student publications and the necessity of grades. However, the proportion of students who disagreed with the positive expression of attitude items regarding those subjects increased dramatically.

TABLE 3

CHANGES IN ATTITUDES TOWARD COLLEGE ISSUES FOR SJSU STUDENTS IN SECOND WAVE (N=374)

	Agree/Strongly Agree		Strongly Disagree/Disagree	
	1974	1975	1974	1975
Students are not informed enough to vote on faculty tenure and promotion.	.28	.27	.14	.24
College officials should clear student publications.	.12	.08	.41	.59
Course grades are necessary as the best way to judge student performance.	.27	.22	.21	.36

Changes in criterion values. Following the enormous volume of literature in the student attitude assessment area, the criterion values used in this study were political and religious values. The political value scale contains 16 items in the strongly agree/strongly disagree response format, meets Likert criteria, and produces two factors that account for 75% of the scale variance. The religious value scale is two items shorter, but otherwise meets even more exactly the Likert scaling criteria and produces a single factor loading that accounts for 84% of the scale variance. Mean scores on these scales in 1974 are nearly identical for the entire sample and the second wave sub-sample. Change figures, then, are legitimate estimates of movement by all students who began the study.

It comes as no surprise that the students, on the average, have become more "liberal" in their political views and less "traditional" in their religious attitudes. The average political attitude change was four points in an extending range. Movement on the religious scale

was smaller -- an average of only two points within a declining range. While other researchers have found changes in emphasis on religious beliefs to be useful in generating an understanding of college impact, the absence of movement on an intrinsically valid scale and the inability to predict student scores with any reliability led to the exclusion of the religious items in the third study wave. The scale will be returned in the final survey administration next year. The model test in this report is based only on political attitude change.

TABLE 4

CHANGES IN POLITICAL AND RELIGIOUS ATTITUDES FOR SECOND WAVE STUDENTS

		Political Scale				Religious Scale			
		$\bar{X}$	$\bar{X}$ Change	SD	Range	$\bar{X}$	$\bar{X}$ Change	SD	Range
SJSU	1974	65	3.9	10.4	32-100	55	1.9	9.4	16-91
	1975	69			25-104	56			15-88
SCU	1974	63	3.8	9.0	26-100	52	1.8	9.5	15-82
	1975	67			34-106				14-84

NOTE: Possible range for the political scale was 16-112, for the religious attitude scale was 14-91.

Predictor variables. In this study, there are 155 individual variables available for each survey wave. These variables fall loosely into three different classifications: social, psychological, and communication (to be subsumed later into the first two groups). Combinations of these variables have been used to predict the criterion political and religious attitudes in each survey wave. Sets of social and psychological indicators have been defined as communication elements in the

context of the college impact model.

SOCIAL VARIABLES	PSYCHOLOGICAL VARIABLES
Major in school	Political self-identification
GPA	Career goals
Hours worked per week	Plans for future
Political party identification	Self-image (index)
Political activity (index)	Preferred teaching style (index)
Political awareness (index)	View of society

COMMUNICATION VARIABLES

First media choice for political news
Type of magazines read regularly
Campus description (index)
Contact with university instruction (index)
Contact with instruction in major (index)
Advisement contact (index)

Of the communication variables, perhaps the most interesting is the index describing the perceived communication freedom at each of the universities in this study. The items were modified from the standardized CUES-II (ETS, 1971) instrument, concentrating only on that portion of CUES-II that described the communication potential for the campus. The items included in the CAMPUS scale for this study had an average part-whole correlation of .46 when appropriate items were reverse-coded from standard Likert format. Average scores between samples showed that Santa Clara students generally perceived greater freedom of communication on campus. More often than students at San Jose State, students at Santa Clara think the administration is interested in their opinions, know where to go with complaints, are encouraged to criticize teaching and administrative practices, see a balance of viewpoints in the faculty, and feel a sense of intellectual

excitement. San Jose State students see the campus as too large and impersonal, but do recognize many individual outlets for creative effort. Differences between the mean scores on this index for the second wave students from both schools were significant at the .001 level. The schools, then, are quite differently perceived as communication environments by their respective student bodies.

Another loosely-defined communication variable in the second wave was the student's impression of faculty contact during instruction. Students were asked to evaluate that contact for their entire university experiences and for their experiences within their major departments. At both schools, students with higher GPAs evaluate faculty more highly, both overall and in their own major fields. Those with intent to pursue a higher degree and those with definite career plans evaluate their major area of instruction more positively. Arts/Humanities and Social Sciences majors are happier with their instruction than students in other areas. There were no differences between schools in the students' reactions to instructional experiences.

The last communication variable was an index of student experiences with advisement. Overall, there were few differences in the students' evaluation of advisement between schools or between major areas within schools. The third wave of the survey (at the beginning of the junior year) should reveal larger differences both between and within universities.

When scores on criterion variables were analyzed by subgroups in each predictor variable, the analysis revealed a package of

discriminating variables in both the psychological and social areas of student experience. In order to approximate a first test of the theoretical model underlying the study and to determine the amount of criterion variance predictable from the sets of data available in the study, the best predictors were grouped into two factors, psychological and social. Each factor was designed to describe communication experiences and perceptual orientations of students in the college environment. Each factor conveniently includes five variables. The social factor can generally be described in behavioral terms; the psychological factor in attitudinal terms. The specific components of these factors are listed below.

SOCIAL FACTOR:
- Major (affiliation)
- Political party identification (affiliation)
- Political activity (participation)
- Political awareness (participation)
- Evaluation of major instruction (campus interaction)

PSYCHOLOGICAL FACTOR:
- Political stand (political identification)
- Career goals (work orientation)
- Self-image (self-identification)
- View of society (social evaluation)
- View of campus (campus communication evaluation)

All the predictor variables were ordered in continuous form, although the approximations to a continuum of the student's major and political party are not entirely defensible. The remaining predictor variables are either indices or single items whose response alternatives were ordered on a continuum in the questionnaire.

Testing the model. In order to test the predictions from the model, change scores on the criterion political attitude scale were divided into three approximately equal groups. Since a high score on the attitude scale indicated a more liberal political stand, students whose second wave scores were significantly lower than their first wave scores were labelled "conservatives." Students whose scores were comparable on both waves were labelled "moderates," and those with significantly higher second wave than first wave scores were labelled "liberals." With full awareness that the range of scores would be restricted and the potential for artificial reduction of correlation was real, stepwise multiple regressions were performed on each group in order to assess the comparability of explained variances in political attitudes (religious attitudes have not yet been analyzed). Regression equations included all ten predictor variables, introduced within factors to a stepwise linear regression model. The data indicate the power of prediction is greatest in the "liberal" group at San Jose State, but greatest in the "conservative" group at Santa Clara.

TABLE 5

WITHIN-GROUP MULTIPLE REGRESSION COEFFICIENTS

	SJSU		SANTA CLARA	
	Mult R	N	Mult R	N
Conservatives	.69	78	.74	59
Moderates	.67	95	.71	84
Liberals	.74	83	.52	49

The compression of criterion variable ranges within subgroups did not seem to affect the efficiency of prediction. The multiple correlation using the full range of the political attitude variable accounted for only 45 per cent of the variance at San Jose State and 38 per cent of the variance at Santa Clara.

While the overall prediction within change groups is of some interest, the model asks whether the psychological or social factors are more cohesive in each prediction group. When inter-item correlations were averaged (using appropriate transformations) as an estimate of the internal consistency of variables within factors, the data indicate that the environment at San Jose State has more potential impact on "liberals" than on "conservatives" while the opposite is true at Santa Clara. The simplistic conclusion is that the former school produces "liberals" (at least at the sophomore year) and the latter, "conservatives." The ranges of political attitude change scores were different between the schools. Not only is the average sophomore political attitude at Santa Clara more conservative than at San Jose, but the range of political attitude change scores was narrower, even though the average change was almost identical.

The model also specifically states that internal consistency in either factor for changers ("liberals" or "conservatives") should be less than the consistency for those students whose political attitudes do not change. The data do not support that generalization,

but they do provide an empirical indication of differences in university environments that is only partly explained by the student perceptions of communication opportunities.

TABLE 6

AVERAGE INTER-ITEM CORRELATIONS FOR PSYCHOLOGICAL AND SOCIAL FACTORS BY CHANGE GROUP

	SJSU		SANTA CLARA	
	r_s	r_p	r_s	r_p
Conservatives	.10	.14	.19	.13
Moderates	.12	.12	.10	.20
Liberals	.16	.14	.10	.19

Further, the model asserts that the power of the social factor in predicting political attitude should exceed the power of the psychological factor at the sophomore year. While the data show that this is generally true, they also differentiate between change groups. Comparable impact of the environment occurs for "conservatives" at Santa Clara and for "liberals" at San Jose State.

TABLE 7

MULTIPLE CORRELATION COMPONENTS FOR FACTORS IN EACH CHANGE GROUP

	SJSU		SANTA CLARA	
	Social	Psych.	Social	Psych.
Conservatives	.43	.25	.43	.31
Moderates	.58	.09	.39	.32
Liberals	.44	.30	.36	.16

As might be expected, there is some problem with multi-collinearity in these regression data; however, reversing the order of factor entry into the regression data does not significantly alter the relative power of the social factor in any of the change groups. Later analyses will concentrate on regression coefficients and prediction residuals rather than the correlation coefficient alone.

The remaining test of the model rests on the comparison of between-factor correlations for students who have changed their attitudes and those who have not. In order to conduct this test, canonical correlations were computed for each of the three change groups, even though the very small subgroup size renders the statistic somewhat unstable. The model indicates that the correspondence between factors will be less for changers than for those who have not changed over any measurement period. The canonical correlations are nearly equal in their magnitude for the first canonical variate in each change group.

However, there is only one variate for those who have been categorized as "moderates" (i.e., they did not show appreciable attitude change) and there are two variates for both groups who have shown attitude change at San Jose State. Since canonical correlation provides weighted linear composites derived from two sets of variables where the weights for the variables are chosen to maximize the correlation, the presence of two variates indicates more than one independent way to account for variance present between the two sets. Therefore, the calculation of two significant

variates where change has occurred indicates a tentative confirmation of the model predictions. There is less cohesion in the college environment of the student who has changed his political attitude in a year's time at San Jose State.

At Santa Clara, there is only one canonical variate for each change group. From other evidence, the more cohesive environment at that university has already been established. Therefore, the model test does not receive firm support from the Santa Clara campus.

TABLE 8

CANONICAL CORRELATIONS FOR CHANGE GROUPS

	SJSU	SANTA CLARA
Conservatives	.55, .45	.56*
Moderates	.56	.56
Liberals	.57, .46	.62

*p > .05

Directional changes. In a final attempt to ascertain the direction of movement by students who became more conservative and/or more liberal in a year's time, directional changes were computed for the students' major, political party identification, political activity, political awareness, political self-identification, career choices, self-image, and view of the society as sick or well. These directional change categories were then cross-tabulated with the change groups on the political attitude scales. Although no statistically significant relationships were found, there was clearly

movement in both political and social factors when political attitudes had shown liberal or conservative change at San Jose State.

Liberals were more likely to have changed their major; conservatives, to have remained with their freshmen choices. Conservatives were more likely to have moved from independent to Republican; liberals, from independent to Democrat. Liberals were generally more active in politics than conservatives and conservatives showed a reduction in overall political discussion.

At both schools, students whose attitudes had shifted toward a more liberal position were also those who identified themselves as more liberal as sophomores than as freshmen.

TABLE 9

RELATIONSHIP OF CHANGE IN POLITICAL ATTITUDE TO POLITICAL SELF-IDENTIFICATION

Political Attitude Change Group	Direction of Self-Identification Change			N
	Conservative	Moderate	Liberal	
Conservatives	.34 (.24)	.38 (.48)	.28 (.27)	117 (62)
Moderates	.27 (.29)	.41 (.42)	.32 (.28)	135 (88)
Liberals	.20 (.19)	.41 (.38)	.39 (.42)	122 (52)

NOTE: numbers in parentheses are from Santa Clara

Students whose self-image moved toward more humanistic orientation between the freshman and sophomore years were more often found in the liberal group in political attitude change and liberals more often changed their view of society toward the unhealthy end of the sick-well continuum. Changes in political attitude were unrelated to changes in career goals.

SUMMARY AND FUTURE ANALYSES

Students involved in this study did, in fact, become more "liberal" politically and less "traditional" in their religious views between their entry into college and the beginning of their sophomore year. Data collected to test the model of student attitude change indicated that the internal consistency of variables in factors included in a system of college impact did differ in predicted directions. Further, the psychological and social factors that characterize the impact system show smaller interrelationships for students who change their political attitudes than for those whose attitudes remain stable. The social factor is the stronger set of predictor variables, as predicted.

The present data point out, however, the futility of generalizing across college systems as if they were identical regarding either the students they attract or the processes of influence they exert on those students once they are matriculated. While the general propositions of the college impact model receive support in the heterogeneous environment of San Jose State University, they do not receive complete support in the more cohesive environment at the University of Santa Clara. Social and psychological factors designed to predict attitudes operate differently if attitude change is conservative or liberal, and that operation is not consistent across campuses. Whether that difference in operation is a statistical artifact or a true difference in system impact remains to be seen when the last wave is complete and when the study sample has, at last, stabilized.

In any event, the potential exists for a good test of different systemic factors and their relative impact on college student attitudes. The variables adopted from the pilot study reported to this group in 1974 have proven stable across time. The new communication variables are already capable of discriminating between disciplines within the university and between universities. Future analysis efforts will concentrate on the careful examination of the variable ranges within each predictive factor in order to avoid differences in predictive capacity that are measurement peculiarities rather than substantive relationships. Also, a more stringent definition of change groups is desirable for future subgroup comparisons. Finally, the development of composite scores for both psychological and social factors will be explored as a more efficient means of expressing relative impact over time. Cross-lagged correlations between criterion variables and predictive factors should contribute significantly to the overriding question asked by research in this area -- doe college have any impact at all?

APPENDIX B-1

POLITICAL ATTITUDE SCALE ITEMS IN LONGITUDINAL STUDY

Q_{25}/Q_{75}		
2.3/5.6	1.	Capital punishment should continue to be judged unconstitutional.
3.2/5.7	2.	A strong military is very important to the success of the American way of life.
2.9/4.7	3.	Private ownership of fire arms should be prohibited.
2.4/4.4	4.	There is too much leniency in the courts toward the criminals in society.
3.0/4.6	5.	Legal and electoral methods are generally effective in producing change in America.
3.7/6.0	6.	In the national budget, social welfare programs should have higher priority than defense.
3.2/5.3	7.	The American way has brought us as close as possible to a society that benefits everyone.
3.0/4.1	8.	Free enterprise is the best way to assure full employment.
2.7/4.0	9.	Property rights are just as important as human rights.
3.7/5.2	10.	Our social and economic system perpetuates poverty.
3.4/5.2	11.	Every family should be guaranteed a minimum income.
2.2/2.9	12.	Trial by jury is the most effective way of securing justice.
3.3/5.1	13.	In our society, the worker is just an instrument to be exploited by big business interests.
3.8/5.6	14.	Wealthy people should pay more taxes to help the poor.
3.0/5.0	15.	More police and law enforcement is the best way to deal with crime.
4.7/6.3	16.	In our society, the rich and the poor are not equal before the law.

Liberal item set = 1, 3, 6, 10, 11, 13, 14, 16
Conservative item set = 2, 4, 5, 7, 8, 9, 12, 15

The questionnaire presented a set of 22 political statements. Response alternatives were strongly agree/strongly disagree (1-7). Six response positions were provided; non-response and/or multiple responses were given the neutral value (4) in the response continuum. Those included in the 16-statement scale were selected through standard Likert scale procedures. All items within a set intercorrelate positively and are negatively related to the other set. When conservative items are reverse-scored, the division of the summative index into top-bottom quartiles produces significant differences ($p \leq .05$) between quartile groups for each item. Alpha = .70 for San Jose freshmen and .75 for Santa Clara freshmen.

NOTE: All scaling procedures are based on the original freshman sample at SJSU (N-1441).

APPENDIX B-2

RELIGIOUS ATTITUDE SCALE ITEMS IN LONGITUDINAL STUDY*

Q_{25}/Q_{75}		
1.3/5.3	1.	Belief in God makes life on earth worthwhile.
1.4/2.8	2.	There are truths and insights to be gained from drugs that can't be found any other way.
1.6/5.8	3.	When in doubt, it is best to ask God what to do.
1.6/4.6	4.	Peace of mind and security may be found through religion.
2.0/3.8	5.	A belief in ESP or other mysteries is the same as a religion.
2.3/5.6	6.	Instead of a religion, a person should have a philosophy of life.
1.6/4.8	7.	There is a Divine plan and purpose for everything on earth.
2.5/6.1	8.	A person should follow his own conscience--not prayer--in deciding right from wrong.
2.2/4.6	9.	Religion is good because it provides a standard for social behavior.
3.1/5.7	10.	A person can be religious without believing in God.
2.6/5.6	11.	The church is the greatest agency for social improvement in the world.
4.2/6.2	12.	The world would be a better place to live if the money spent on science were devoted to religion.
2.4/5.2	13.	A belief in God is merely a way of "explaining" the unknown.
2.4/4.9	14.	Meditation can provide more insights into the meaning of life than prayer.

Traditional item set = 1, 3, 4, 7, 9, 11, 12
Philosophical item set = 2, 5, 6, 8, 10, 13, 14

The questionnaire presented only these items in the section on religion. Response alternatives were strongly agree/strongly disagree (1-7). Six response positions were provided; non-response and/or multiple responses were given the neutral value (4) in the response continuum. Standard Likert scaling procedures were used to establish the religious scale. All items were a set intercorrelate positively and are negatively related to the other set. When traditional items are reverse-scored, the division of the summative index into top-bottom quartiles produces significant differences ($p \leq .05$) between quartile groups for each item. Alpha = .85 for both San Jose and Santa Clara freshmen samples.

*All scaling procedures are based on the original freshman example at SJSU (N=1441).

APPENDIX B-3

SELF-IDENTIFICATION TYPOLOGIES IN LONGITUDINAL STUDY

Twenty self-identifying statements were presented. Directions instructed the students to state how well each of the statements described them; response categories and scores were very well (4), moderately well (3), not very well (2) and not at all (1). Items with no response were deleted from the typology analysis. Inter-item correlations formed preliminary attempts at typology formation. As a result of this preliminary analysis, four items were deleted from the original 20. Items that clustered were summed and averaged for computation of differences between these clusters. Three clusters emerged; to be typed into any of these clusters, the student's average response in one cluster had to be greater than the average response in either of the other two clusters. This method resulted in the "typing" of 1,318 students from the SJSU freshman sample. It was not possible to classify the remaining 195 into any clear self-identification typology. The typologies, with descriptive labels, are presented by item component. All statements were preceded by the identifer, "I am a person who..."

PRAGMATIST/LOGICIAN (659 Types)

Is interested in practical, down-to-earth activities
Values harmony and inner peace more than excitement
Is interested in logical and rational ideas
Values concrete accomplishments
Plans activities in a systematic way
Keeps feelings and emotions under control

ARTIST/HUMANIST (598 Types)

Enjoys trying as many new things as possible
Has a strong concern for the feelings of others
Is interested in artistic expression
Enjoys being a leader
Feels a strong sense of personal responsibility for resolving social problems
Openly shows feelings and emotions

REBEL (57 Types)

Is in conflict with almost all authority
Often worries about whether decisions are right
Doesn't mind taking advantage of someone financially better off than I am
Tends to be suspicious of others' motives

MIXED TYPES OR NON-RESPONSE (N=195)

APPENDIX B-4

INDICES OF WORK GOALS, POLITICAL ACTIVITY AND POLITICAL AWARENESS IN LONGITUDINAL STUDY

INDEX OF GOALS FOR LIFE'S WORK

Seven items were included in the questionnaire. For each of the items, students were instructed to respond whether the goal statements were essential, important or unimportant in their choice of life's work. Using scores of 1-3, from unimportant to essential, inter-item associations were used to determine goal clusters. After preliminary analysis, one item was deleted from further computation. Two clusters were formed, practical and social. Practical items were reverse-scored to form a unidirectional index emphasizing social goals. The clusters are presented below; higher scores on the index should be interpreted as endorsement of social goals, rejection of practical goals. Possible score range was 6-18; obtained range was 6-18. Non-responses were deleted from the analysis; figures are based on 1,441 San Jose State University freshmen.

PRACTICAL GOALS:	Above-average income; job security; good living environment
SOCIAL GOALS:	Helping others; serving society; solving challenging problems

INDEX OF POLITICAL ACTIVITY

Five political activities were included in the questionnaire. Students were instructed to report whether they had ever done any of these political acts. Responses were coded "yes" (1) and "no" (0) for possible Guttman scaling. The coefficient of reproducibility for these five items was .85, not acceptable as evidence of a Guttman scale. The items are presented below in descending order of participation; scaling procedures were carried out on 1,509 freshman responses from San Jose State University. All items were preceded with the general inquiry, "Have you ever..."

	YES	NO
Carried a petition or participated in a sit-in or demonstration for any candidate or issue?	.14	.86
Given money or bought tickets or anything to help any candidate or issue?	.26	.74
Gone to any political meetings in connection with a candidate or issue?	.36	.64
Talked to people to try to get them to vote for or against any candidate or issue?	.43	.57
Signed a petition?	.63	.37

Items in this index narrowly missed Guttman criteria in the first survey wave at SJSU, but the second wave coefficient of reproducibility was .89 with minimum marginal reproducibility at .71. Coefficients at Santa Clara were nearly identical. The second wave coefficient of scalability was .61. The items scaled in the response frequency order given above.

APPENDIX B-4 (continued)

INDEX OF POLITICAL AWARENESS

Three communication items were included in the questionnaire. Students were instructed to respond to these items with the report of frequency: very often (3), only sometimes (2), almost never (1). No scaling attempt was made for these items. Responses were summed as an index of awareness.

How often do you discuss politics with your family or friends?

How often do you read about politics in newspapers or magazines?

How often do you watch political news or commentary on TV?

APPENDIX C-1

INDEX OF CAMPUS IMAGE

Twelve statements, patterned after similar items in the standardized instrument CUES-II were used to compile an index of campus image. The items were chosen to emphasize the presence or absence of communication opportunities on campus and students were asked to indicate how well each statement described his campus. The response choices were--very well (4), moderately well (3), not very well (2), not at all (1). Scores were summed across items for a possible 12-48 range. Actual score range in the 1974 questionnaire administration was 14-45 at SJSU and 20-46 at Santa Clara. No attempt was made to scale the items; average item-total correlations were .50. The statements are listed below:

There are easily available channels for student complaints.

Student participation in social reform and political programs is encouraged.

There is little student concern about national and international affairs.

Interest in analysis of social values and ethics is high.

The administration seems interested in student views.

Public debates on controversial issues are not held often.

Many outlets for individual creative effort are available.

Student criticism of administration policies and teaching practices is encouraged.

A real balance of viewpoints is missing since the faculty has many more liberals than conservatives.

The campus is so large that the administration seems very impersonal.

The lecture/concert program is very active.

There is no sense of intellectual excitement on campus.

APPENDIX C-2

INSTRUCTOR EVALUATIONS FOR TOTAL UNIVERSITY AND MAJOR AREA EXPERIENCE

Ten items that describe positive instructor activities were presented for student response regarding their occurrence at the university in general and in the student's major area. Response categories were scored according to the frequency of each activity: almost always (4), often (3), sometimes (2), and never (1). Scores were summed across items to create the indices for the university and for the student's major area. The possible ranges for each index were 10-40. Obtained ranges were 14-40 (university) and 10-40 (major) at SJSU and 16-39 (university) and 14-40 (major) at SCU. If the student had not had courses in his major, he was instructed to mark the response category "does not apply." Items were not scaled; item-total correlations averaged .60 for university items and .80 with items describing instruction in the student's major area. The statements are listed below:

MY INSTRUCTORS HAVE...

Been available outside class at times convenient to me.

Been easy to talk to.

Geared their teaching to student interests and abilities.

Really listened to student questions in class.

Presented more in class than I learned from reading the text.

Been clear about what they expected of students.

Treated all their students fairly.

Set standards so that it was easy to get a high grade.

Returned exams/papers with enough comments to be helpful.

Been prompt in giving back student work.

APPENDIX C-3

INDEX OF ADVISEMENT

Five items were used to measure the student's contact with his advisor and the perceived help provided by the advisement sessions since the student first enrolled on campus. Negative items were reverse-scored so that high scores meant positive advising experience. Response categories asked for frequency of contact: (1) not at all, (2) once or twice, and (3) three times or more. The possible score range was 5-15; the range at SJSU was 5-15 and was 6-15 at Santa Clara. Average item-total correlation was .50. The items are listed below:

Talked with my adviser for 15 minutes or more

Received bad information about programs or courses from a counselor or adviser

Asked a student about which courses to take

Been able to get help needed for course planning from a counselor or adviser

Dropped a course because it wasn't giving me what I thought it should